

X-Stream **JET PUMP**

Owner's Manual and Parts Manual

MARINEPOWER
The Force Behind The Fun.™

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INTRODUCTION

Marine Power is proud to offer the latest generation of axial flow jet pump - the X-Stream. This product is part of the Marine Power family of products. This pump is especially designed to perform with the Marine Power JetPac engine. We know you will enjoy many hours of boating fun with this product.

Please read and familiarize yourself with this manual before operating your engine and jet pump.

WARRANTY REGISTRATION

The Federal Boat Safety Act of 1971 *requires* that registration of marine products sold in the United States be maintained by the manufacturer and dealers of those products. It is imperative that *MARINE POWER* receive your Warranty Registration form properly completed for warranty purposes, and to comply with federal regulations. This registration also enables us to contact you, if it should become necessary, to change or improve the product for your protection. **WARRANTY REGISTRATION MUST BE RECEIVED WITHIN 10 DAYS AFTER DATE OF PURCHASE BY THE FIRST OWNER. NON-COMPLIANCE MAY VOID ALL WARRANTIES.** Please note that no warranty repairs are to be performed without prior authorization from Marine Power.

IDENTIFICATION

Every Marine Power X-Stream is equipped with an Identification Tag, also known as a Serial Number Tag. This tag contains information (model number and serial number) that will be required before any warranty work (if necessary) can be done.

Example:

MARINE POWER[®]	
MOD	S5.7V
SER	12345

LIMITED WARRANTY STATEMENT: Jet  Pump

1. MARINE POWER, LLC, ("the Company") warrants each new MARINE POWER X-Stream Jet Pump *properly registered* with MARINE POWER to be free from defects in material and workmanship.
2. The warranty shall commence, *after receipt of a properly completed Warranty Registration form at the factory*, within ten (10) days from the date of the first retail purchase and extends to original and subsequent purchasers. However, in no event shall the duration of this Warranty exceed one (1) year measured from the original retail sale date. All subsequent purchasers must inform MARINE POWER, in writing and with a payment of \$50 transfer fee, of the sale of this unit to continue the warranty. If notification is not received by MARINE POWER within fifteen (15) days of the resale the warranty shall be null and void.
3. In the case of commercial or competition use, this Warranty shall be in effect for ninety (90) days from the date of start-up, but no longer than six (6) months from the first date of retail purchase.
4. The Company's obligation is limited to repairing or replacing those parts defective in material and workmanship only. At its option, it may replace such part with a part of equal quality as shall be necessary to remedy any malfunction resulting from a defect in material or workmanship as covered in this Warranty. MARINE POWER will make all necessary repairs under this Warranty free of charge at the MARINE POWER factory. Optionally, MARINE POWER may provide for the repair or replacement of any defective part at a servicing center of MARINE POWER's choice. MARINE POWER will make payment reimbursements for labor to replace such part with prior authorization for repair.
5. MARINE POWER must be advised of any warranty related problem prior to the expiration of the Warranty.
6. This Warranty will not apply to the following:
 - a. Failure resulting from accidents, sinking, fire, neglect, abnormal service or abuse, competition, towing or operating unit in insufficient water depth.
 - b. Failure resulting from improper installation improper adjustments or improper delivery.
 - c. Failure resulting from the use of parts, fuels, oils or lubricants not suitable for use with this unit.
 - d. Failure resulting from modification, alteration, or use of unsuitable materials.
 - e. Loss of, but not limited to, income, use, inconvenience, towing, haul out/launch, storage charges, dock charges.
 - f. Expenses such as, but not limited to, telephone, lodging, travel and/or mileage, rental for substitute equipment.
 - g. Removal and replacement of furniture, carpet, cleaning, painting, carpentry work, or other expenses not related to defect in material or workmanship. Reasonable access must be provided to the product for warranty service.
7. It is the owner's responsibility to comply with the following:
 - a. Verify the pre-operational inspection has been performed, all information has been recorded and the warranty registration has been properly completed and forwarded to Marine Power.
 - b. Follow the instructions as stated in the Owner's Manual regarding the operation, break-in, lubrication and fuel.
 - c. Operate unit in a safe manner.
 - d. Follow the scheduled maintenance, operating limits, and storage instructions as stated in the Owner's Manual.
8. Warranty service must be requested by delivering the product for inspection to any convenient Jet Pump service center.
9. Proof of Warranty must be provided at the time of request for Warranty service. ***A properly completed Warranty Registration form must be on file with Marine Power, LLC.***
10. Distributors, dealers or service providers are not agents for MARINE POWER, LLC. The Company's obligation under this warranty is strictly and exclusively limited to the repair or replacement of defective parts and does not authorize any person to create for it any obligation of liability in connection with this product nor does the Company assume any obligation due to incorrect or defective installation by the dealer.
11. All incidental and/or consequential damages are excluded from this Warranty. Implied warranties are limited to the life of this Warranty. All implied warranties including merchantability, fitness for a particular purpose, or otherwise are disclaimed in their entirety after expiration of the appropriate one (1) year warranty period. This Warranty gives you specific rights, and you may also have other rights, which may vary from state to state. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.
12. MARINE POWER, LLC, reserves the right to change or improve design of any product previously assembled without notice or without obligation.
13. In the event that a warranty claim is required outside of the continental United States, with the exception of Alaska or Hawaii, there may be additional charges to the engine owner. MARINE POWER will not warranty any engine or jet unit outside the continental United States, with the exception of Alaska and Hawaii, unless competent and trained personnel are available to provide service to the product.

SAFETY

When operating any type of equipment, it is important to be familiar with the material containing warnings, cautions and other special noted information. These safety precautions are necessary to conform to U.S. Coast Guard regulations. It is imperative that the operator is thoroughly familiar with the operation of the equipment in order to ensure proper safety and maximum performance of the product.

- ◆ **WARNING** This is designed to call your attention to a step or procedure that if not strictly adhered to could cause serious injury or death.
- ▼ **CAUTION** This is designed to call your attention to a step or procedure that if not strictly adhered to could result in damage to the equipment.
- **NOTE** This information is designed to assist you.

For added safety and equipment performance, please observe the following notes. Also, never attempt to make repairs or correct problems you are not qualified to perform.

- ✓ STOP engine before refueling.
- ✓ STOP engine prior to inspection or repair.
- ✓ Ensure proper ventilation is maintained at all times.
- ✓ Do not start engine until you are sure no one is standing near equipment.
- ✓ Make sure all safety guards are in place prior to starting the engine.
- ✓ Make sure all tools have been removed after repairs prior to starting the engine.

PARTS AND SERVICE

Please contact one of the following should parts and/or service is required:

Marine Power
17506 Marine Power Industrial Park
Ponchatoula, LA 70454
Ph: (504) 386-2081
Fax: (504) 386-4010

Marine Power Northwest
917½ 6th Street (Alley)
Clarkston, WA 99403
Ph: (509) 758-7476
Fax: (509) 758-3312

PRE-OPERATION INSPECTION

Each Marine Power X-Stream has been thoroughly inspected before leaving the factory. Please read the following prior to operation of this unit.

1. Open or remove engine hatch cover to let compartment air out for approximately ten (10) minutes.

◆ WARNING: Make sure that the ignition is turned "OFF" and no electrical equipment is energized prior to any engine inspection or operation. DO NOT energize engine prior to performing the following procedures.

2. Check engine oil level, remove dipstick, wipe clean and recheck. Inspect oil filter for tightness (it should be snug).
3. Check coolant levels (fluids should be at proper levels).
4. Check for coolant, oil and fuel leaks. Correct any leaks before proceeding any further.
5. Check battery for charge and fluid level. Inspect connections for corrosion, and clean if necessary.
6. Check air cleaner/flame arrestor to make sure it is clean. Clean or replace if necessary.
7. Inspect the exterior of the heat exchanger (if equipped) for leaks. Correct if necessary.
8. Check alternator belts for tightness.
9. Check engine, especially manifold/risers for loose bolts, nuts or any other loose parts.

▼ CAUTION: Make sure jet unit is in NEUTRAL position.

10. Inspect the exterior of the jet unit. Clean if necessary.
11. Check for any water leakage.
12. Make sure thrust bearing is greased.
13. Check jet unit for loose bolts, nuts, or any other loose parts.
14. Start bilge fan and let run for about ten (10) minutes.
15. Replace engine cover/hatch.
16. Check bucket area, ensure there is nothing that will hinder movement.
17. Turn steering wheel, ensure there is nothing that will hinder movement.
18. Cycle bucket at least once up and down to ensure there is nothing that will hinder movement. Bucket should be easy to cycle up and down.

NORMAL START - Carbureted Engine

▼ CAUTION: **Make sure jet unit is in NEUTRAL position.**

1. Advance throttle lever slightly.
2. Turn ignition key switch to "START" position and release as soon as engine starts.
3. After engine starts, return throttle to idle position.

▼ CAUTION: **If engine stalls or falters while starting, wait three to four seconds before re-engaging starter. This will prevent possible starter or engine damage.**

► NOTE: **During starting procedure, the starter should not be engaged for periods longer than 30 seconds. Wait at least two (2) minutes between cranking periods to prevent starter overheating.**

COLD ENGINE START - Carbureted Engine

▼ CAUTION: **Make sure jet unit is in NEUTRAL position.**

1. Pump throttle lever one or two times (one or two cycles in forward position).
2. Advance throttle lever slightly.
3. Turn ignition key to "START" position and release when engine starts.
4. After engine starts, adjust throttle so that the tachometer reads 900 -1,000 RPM for engine warm-up.
5. When engine warms-up, return throttle to idle position.

► NOTE: **During starting procedure, the starter should not be engaged for periods longer than 30 seconds. Wait at least two (2) minutes between cranking periods to prevent starter overheating.**

ENGINE STARTING - IPI Engine**Initial Starting Instructions:**

1. Make sure the fuel/water separator filter is filled to the top with clean, fresh gasoline and screw the filter onto the base. Tighten the filter one half of one turn after the filter gasket contacts the base. *Note: On EFI equipped engines, the fuel/water separator must be completely filled with fuel before installing filter.*
2. Check the following:
 - A) Sufficient fuel in the fuel tank and the fuel line.
 - B) Both the fuel feed line and the fuel return line have no kinks or sharp bends which may cause restrictions. This may effect the initial start-up and engine performance.
3. Cycle the ignition switch 3 times. One cycle is defined as follows:
 - A) Key to ignition position.
 - B) Fuel pump runs for two seconds then shuts off.
 - C) Key to "OFF" position.
 - D) Pause for 10 seconds.
4. After cycling the ignition 3 times, turn the switch to the start position until the engine starts or 20 seconds elapse.

STOPPING ENGINE - NORMAL CONDITIONS

▼ **CAUTION:** Make sure jet unit is in **NEUTRAL** position.

1. Place bucket control lever in "NEUTRAL" position.
2. If engine has been running at high RPM, let it run at fast idle (900 - 1,000 RPM for at least three to four minutes). This will enable the engine to cool down properly.
3. When engine has cooled down or returned to normal operating temperature, place throttle lever in idle position.
4. Turn ignition switch to "OFF" position.
5. Remove ignition key from engine.
6. Close fuel supply valve.

STOPPING ENGINE - ABNORMAL CONDITIONS

▼ **CAUTION:** Make sure jet unit is in **NEUTRAL** position.

1. Place bucket control lever in "NEUTRAL" position.
2. Turn ignition switch to "OFF" position.

◆ **WARNING:** If engine continues to run after ignition switch has been turned "OFF", immediately turn ignition switch back to the "ON" position and allow engine to cooled down at idle.

3. If the engine is overheated, it may be due to loss of coolant. It is best to stop the engine immediately.

◆ **WARNING:** **DO NOT** run engine while engine is out of the water. Serious damage could occur to engine and jet. This damage will not be warrantable.

◆ **WARNING:** To avoid serious injury, **DO NOT** attempt to check fluid levels while engine is hot. Cover the tank cap with a thick cloth and turn slowly counterclockwise to the first stop to release tank pressure. When pressure has been released, push down on cap and remove.

4. Allow the engine to cool down.
5. After engine has cooled, check the oil level and add oil if necessary.
6. Check coolant level. Add coolant as specified in "Engine Specifications Section" of your engine owner's manual.
7. Make sure ignition switch is to "OFF" position.
8. Remove key from ignition.
9. Add coolant slowly until heat exchanger is full. See *instructions in Engine Owner's Manual*.
10. Close fuel supply valve.

ROUTINE MAINTENANCE SCHEDULE - JET UNIT

For Engine Maintenance Schedule - Please refer to Routine Maintenance Schedule in the engine's Owner's Manual.

Procedure	Every Operation	Every 10 Hours	Every 25 Hours	Every 50 Hours
Check lubrication	X			
Check grease fittings - add if necessary		X		
Check drive line - grease if necessary				X
Grease U-Joint				X
Grease thrust bearing			X	
Inspect zinc anode			X	
Inspect main shaft seal for debris		X		
Check for leakage around seals			X	
Check for loose bolts, nuts, etc.		X		

ROUTINE MAINTENANCE

The above chart was designed to assist you in maintaining a proper maintenance schedule for your Marine Power *X-Stream* Jet unit. The following section is more specific steps to follow for your jet maintenance.

To ensure that your equipment is ready to use, perform the following tasks:

1. Make frequent inspections of all inlets, outlets and lines for tightness and/or leakage.
2. Keep your equipment as clean as possible. This will assist in locating areas that may need attention.
3. Check steering to ensure that it is operating properly and there is no binding.
4. Check shift mechanism to ensure that it is operating properly and there is no binding.
5. Check lubrication before every operation.
6. Make sure the lubrication schedule is maintained.
7. Add grease if necessary. **DO NOT OVERFILL.**

ROUTINE MAINTENANCE - Continued

◆ **WARNING:** Make sure engine and jet unit is turned "OFF". Never lubricate while equipment is running.

Adding Grease:

It is normal to add grease after approximately every 10 hours of operation. Depending on the type of operation, the amount needed will vary. When adding or replacing grease, make sure it meets the proper specifications. For most operations, the equipment will require grease approximately every 25 hours. No break-in period is required. It is recommended that the thrust bearing and shaft spline be inspected during every operational check.

Recommendation:

We recommend Black Maxi-Lube #4098 or equivalent. It is important not to mix two different brands of lubricant, they may not be compatible and may cause damage to the jet unit.

Drive Line Greasing:

1. Remove engine cover.
2. Inspect drive line.
3. Make sure drive line is properly greased.
4. Periodically (annually at a minimum), coat the drive line with grease. Apply a minimum amount, **DO NOT OVERGREASE.**

Universal Joint Greasing:

1. Remove engine cover.
2. Clean the universal joint fitting.
3. Make sure grease gun fitting is free of contaminants.
4. Using minimum pressure, add grease. **DO NOT OVERFILL.**
5. After removing grease gun, clean grease fitting and associated surfaces.

Thrust Bearing Greasing:

1. Remove engine cover.
2. Clean thrust bearing grease fitting.
3. Make sure grease gun fitting is free of contaminants.
4. Using minimum pressure, add grease. **DO NOT OVERFILL.**
5. After removing grease gun, clean grease fitting and associated surfaces.

ROUTINE MAINTENANCE - Continued

- ◆ **WARNING:** Make sure engine and jet unit is turned "OFF". Never lubricate or inspect while equipment is running.

Zinc Anode Inspection:

This procedure should be performed at every **25 hours** of operation, and no less than once at the beginning of the season and prior to storage or lay-up. This anode is designed to protect your jet unit from corrosion. The zinc anode should be clean and bright in order to be in perform properly. If anode has a powdery residue it cannot perform efficiently, *replace immediately*.

1. Remove boat from water.
2. Inspect the zinc anode on the underside of the tailpipe.
3. Inspect anode for cleanliness and brightness.
4. If anode is less than 60% of its original size, replace immediately.
5. Make sure engine and jet area is clean and free of contaminants.

- ◆ **WARNING:** DO NOT lubricate anode or coat with any material. This coating will interfere with the corrosion protection.

Mechanical Shaft Seal Inspection:

This inspection should be made on the first start-up, after every **50 hours** of operation, at the beginning of each season and prior to storage or lay-up.

- ◆ **WARNING:** Make sure key is out of ignition and the electrical equipment is not energized prior to inspection. Do not energize engine prior to performing this inspection. Remove boat from water prior to performing this inspection.

1. Remove engine cover.
2. Remove inspection cover from jet unit.
3. Inspect seal area for debris.
4. Close inspection cover, return boat to water. While engine cover is open, observe area below the main jet drive bearing for leaks.

ROUTINE MAINTENANCE - Continued**25 Hour Inspections:**

The following inspections should be performed on your Marine Power X-Stream after every **25 hours** of operation.

▼ **CAUTION:** If engine/jet unit is used under severe operating or environmental conditions.

◆ **WARNING:** Make sure key is out of ignition and the electrical equipment is not energized prior to inspection. Do not energize engine prior to performing this inspection.

1. Make sure there is no electrical equipment energized.
2. Check all seals for leakage. If leak appears, correct before proceeding further.
3. Check all lubrication points for corrosion and debris.
4. Grease thrust bearing.
5. Clean outer surface of pump.
6. Check hose and replace if necessary.
7. Lubricate all linkage points.
8. Check for loose nuts, bolts or other items.
9. Check zinc anode (located on tail pipe).
10. Start bilge fan and let run for approximately 10 minutes.
11. Replace engine cover.

50 Hour Inspections:

The following inspections should be performed on your Marine Power X-Stream after every **50 hours** of operation.

▼ **CAUTION:** If engine/jet unit is used under severe operating or environmental conditions.

◆ **WARNING:** Make sure key is out of ignition and the electrical equipment is not energized prior to inspection. Do not energize engine prior to performing this inspection.

1. Make sure there is no electrical equipment energized.
2. Check all seals for leakage. If leak appears, correct before proceeding further.
3. Check all lubrication points for corrosion and debris.
4. Grease thrust bearing.

ROUTINE MAINTENANCE - Continued

50 Hour Inspections - Continued:

5. Grease universal joints.
6. Clean outer surface of pump.
7. Check hose and replace if necessary.
8. Lubricate all linkage points.
9. Check for loose nuts, bolts or other items.
10. Check zinc anode (located on tail pipe).
11. Start bilge fan and let run for approximately 10 minutes.
12. Replace engine cover.

ADJUSTMENT & REPAIR

There are only two adjustment or repair procedures that the operator should perform. The first is the bucket adjustment (if necessary). The bucket may go out of adjustment if unit has been operated in an demanding environment.

The second repair procedure is to clean out the intake grate. It is possible to clog or cover the intake grate during operation through leaves, weeds, or other waterborne materials.

Cleaning the Intake Grate:

▼ CAUTION: Make sure inspection cover is above the water line prior to opening.

1. Back the throttle down immediately and shut-off engine. This will allow most materials to fall away due to lack of intake suction.
2. If this does not cure the problem, turn off the engine.
3. Remove the blockage manually.
4. Open the inspection cover and clear the intake grate.

► NOTE: Inspection cover must be above the water line before opening cover. Water will enter boat if cover is below water line. Water damage is not a warrantable expense.

WARRANTY REPAIR

If warranty repair is needed, do not proceed without prior authorization from Marine Power or Marine Power Northwest. For authorization:

Marine Power Technical Assistance
Ph: (504) 386-2081 Fax: (504) 386-4010

Marine Power Northwest
Ph: (509) 758-7476 Fax: (509) 758-3312

TROUBLESHOOTING & DIAGNOSIS

If you should experience problems starting or operating your jet unit, it may be due to a simple or minor problem that may be quickly corrected. Your Marine Power X-Stream is a relatively simple operating unit, therefore operating problems may be occurring in your engine. Review the following section if you should encounter a problem.

Often equipment problems develop as a result of normal use. These problems usually develop if the jet unit has not received periodic maintenance.

Check these items first if a problem occurs:

1. Blocked intake.
2. Blocked or jammed drive line.
3. Worn bearings.
4. Blocked water delivery tube.

PROBLEM	CAUSE
1. Thrust bearing leakage	1. Damaged seal on thrust face.
2. High pitched whine, rattle or vibration	2. Damaged thrust bearing.
3. Excessive vibration.	3. Damaged bearings or universal joints.
4. Poor acceleration performance, running at progressively higher RPM's to maintain the same performance.	4. Damaged impellers - worn or damaged leading edges, or too much clearance between impeller tips and stator housing.
5. Instantaneous increase in RPM's, no change in performance.	5. Damaged engine tachometer. Check sender, wiring, etc.
6. High RPM's noisy operation, highly aerated water from jet. <i>Note: Faults 2, 3 & 4 may be caused by Cause #6 also.</i>	6. Intake screen is clogged - check and clear if necessary. Foreign objects/material may be wrapped around shaft. Clear shaft obstruction. Impeller(s) installed incorrectly (reversed).